

Date: Sat, 11 Sep 93 04:30:14 PDT
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V93 #43
To: Ham-Ant

Ham-Ant Digest Sat, 11 Sep 93 Volume 93 : Issue 43

Today's Topics:

 Elnec/Mininec
 G5RV (2 msgs)
 Helath risks (2 msgs)
 Helically-wound dipoles ??
 J-Pole design/diagram needed.
 MFJ roll-up j-pole
 Problem with MININEC3
 Tower Questions (2 msgs)

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Thu, 9 Sep 1993 19:58:46 GMT
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!math.ohio-state.edu!sdd.hp.com!
col.hp.com!fc.hp.com!goris@network.ucsd.edu
Subject: Elnec/Mininec
To: ham-ant@ucsd.edu

I'm thinking about buying a copy of ELNEC, and am
looking for comments from anyone who's used it - how is the human
interface, what kind of functionality does it have, what does it give
you in terms of ease-of-use than MININEC doesn't have? Any bugs?

Also, does anyone know if MININEC is available in any languages other
than BASIC (for example C)? I'd like to compile it on my HP-720 to
run some gonzo antenna simulations.

I've used YAGIMAX extensively, and I love it, but now I'm working on colinear verticals, so I need a more generic antenna modeler.

Thanks,

Andy Goris
AA0CM
goris@fc.hp.com

Date: Fri, 10 Sep 93 06:31:51 GMT
From: netcomsv!bongo!skyld!jangus@decwrl.dec.com
Subject: G5RV
To: ham-ant@ucsd.edu

In article <CD3r6G.7AF@srngenprp.sr.hp.com> alanb@sr.hp.com writes:

>
> Jeffrey D. Angus (jangus@skyld.tele.com) wrote:
>
> : Eh? two pieces of 50 ohm coax ran as shield balanced line are
> : terminated with 200 ohms, not 100.
>
> Nope, it's 100 ohms. Think of the voltage across the load (assume
> a 100-ohm resistor). The voltages from the two coaxes are 180
> degrees out of phase and equal in amplitude. So the voltage at the
> center of the resistor is zero volts. You could ground the center
> of the resistor with no change in any of the voltages or currents.
> This would make each coax terminated in 50 ohms, which is correct.
>
> AL N1AL

Bzzzzzt! Wrong. Next contestant please.....

2:1 voltage transformers = 4:1 impedance transformers.

100 watts @ 50 ohm load, 70.7 volts. 2:1 voltage transform = 141 volts.
100 watts and 141 volts = 200 ohms. 4:1 impedance transform.

The conclusions leading up to the wrong answer are close to right, but they forget to take into account that power remains constant. Except for certain liberal Democrat claims, there is no such thing as a free lunch.

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NA | "It is difficult to imagine our
Internet: jangus@skyld.tele.com | universe run by a single omni-
US Mail: PO Box 4425 Carson, CA 90749 | potent god. I see it more as a

Phone: 1 (310) 324-6080

| badly run corporation."

Date: Thu, 9 Sep 1993 19:51:51 GMT
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!usc!sdd.hp.com!col.hp.com!
news.dtc.hp.com!srngenprp!alanb@network.ucsd.edu
Subject: G5RV
To: ham-ant@ucsd.edu

Jeffrey D. Angus (jangus@skyld.tele.com) wrote:

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of the resistor with no change in any of the voltages or currents.
This would make each coax terminated in 50 ohms, which is correct.

AL N1AL

Date: Thu, 9 Sep 1993 14:23:27 -0400
From: magnesium.club.cc.cmu.edu!news.sei.cmu.edu!bb3.andrew.cmu.edu!
andrew.cmu.edu!ga25+@uunet.uu.net
Subject: Helath risks
To: ham-ant@ucsd.edu

A woman at my wife's office recently sold a piece of land to a company
that's putting up a radio transmitter. The neighborhood has gotten nuts
claiming all sorts of "risks" to residents' health and are trying to
stop the copnstruction. Do any of you have any information that might
help us show them that there's no danger from radio waves? I guess
they're concerned that the radio waves will cause cancer or the tower
will fall over--some such nonsense.

Any reports that can be pointed out or forwardde would be much appreciated!

Thanks,
Gary Aulfinger
System Administrator, Information Networking Institute
Carnegie Mellon University

Date: Fri, 10 Sep 1993 14:59:50 GMT
From: sdd.hp.com!cs.utexas.edu!uwm.edu!vixen.cso.uiuc.edu!milo.mcs.anl.gov!
ANLVM.CTD.ANL.GOV!B10990@network.ucsd.edu
Subject: Helath risks
To: ham-ant@ucsd.edu

In article <UgXrGTK00io=01PVUR@andrew.cmu.edu>
Gary Aulfinger <ga25+@andrew.cmu.edu> writes:

>
>
>A woman at my wife's office recently sold a piece of land to a company
>that's putting up a radio transmitter. The neighborhood has gotten nuts
>claiming all sorts of "risks" to residents' health and are trying to
>stop the copnstruction. Do any of you have any information that might
>help us show them that there's no danger from radio waves? I guess
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>Any reports that can be pointed out or forwarde would be much appreciated!
>
>Thanks,
>Gary Aulfinger
>System Administrator, Information Networking Institute
>Carnegie Mellon University
>
>
>

The RF/microwave cancer scare is fairly ancient history, so I'm not
aware of much recently in print about it. A good review article on all
known biological effects is "Interaction of Nonmodulated Radio Frequency
Fields with Living Matter: Experimental Results" by S. M. Michaelson in
Handbook of BiologicalEffects of Electromagnetic Fields, CRC Press, Boca
Raton (1986). Feel free to e-mail me if you need more info.

Gary E. Myers CIH, K9CZB	BITnet: B10990@ANLVM
Environment, Safety and Health Division	Internet: GEMYERS@ANL.GOV
Bldg. 200	Phone: (708)252-5642
Argonne National Laboratory	FAX: (708)252-7608
Argonne IL 60439	AX.25: K9CZB@W9QVE.IL.USA.NA

Date: Thu, 09 Sep 93 16:45:03 GMT
From: netcomsv!bongo!skyld!janguus@decwrl.dec.com
Subject: Helically-wound dipoles ??

To: ham-ant@ucsd.edu

In article <26kus0\$rne@clarknet.clark.net> jaevans@clarknet.clark.net writes:

> I have seen articles on vertical helically wound antennas for hf bands but
> was wondering if anyone has seen articles or experimented with using
> horizontal helically wound elements for dipoles in the hf bands.

At the TRW Swapmeet every month there is some guy selling 40 meter dipoles made with helically wound elements. Apparently they work fine because he is still there. (I.e., no one has come and killed him yet.)

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NA	"It is difficult to imagine our
Internet: jangus@skyld.tele.com	universe run by a single omni-
US Mail: PO Box 4425 Carson, CA 90749	potent god. I see it more as a
Phone: 1 (310) 324-6080	badly run corporation."

Date: Fri, 10 Sep 1993 08:18:58 -0500
From: sdd.hp.com!swrinde!cs.utexas.edu!uwm.edu!spool.mu.edu!think.com!spdcc!merk!
harvee.billerica.ma.us!esj@network.ucsd.edu
Subject: J-Pole design/diagram needed.
To: ham-ant@ucsd.edu

In <1993Sep8.170555.25552@ncsu.edu>, lou Williams writes:

>I am looking for the diagram/construction design for a 2-Meter (dual-band?)
>J-Pole antenna. I've lost mine during the course of moving and all I can
>recall is that one leg is 58", another leg at 19", resembling a J, using
>450 ohm ladder line. (It needs to be portable/inconspicuous, that's why
>I'm referring to the ladder line version.)
>
>Can anyone provide me with the necessary specs on constructing this antenna?

send the message

send jpole

to server@harvee.billerica.ma.us and a set of jpole designs will be in the mail.

--- eric

--

HOME: esj@harvee.billerica.ma.us HAM ka1eec
WORK: 617.630.4687 (w) esj@ruby.polaroid.com

source of the public's fear of the unknown since 1956

Date: 9 Sep 1993 13:22:34 -0400
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!gatech!destroyer!
vela.acs.oakland.edu!vela.acs.oakland.edu!swood@network.ucsd.edu
Subject: MFJ roll-up j-pole
To: ham-ant@ucsd.edu

Anyone know where this design is taken from. Mine is still working, so I don't want to tear into it yet, but I was wondering how complex all the parts were. It is a great portable or quick set-up antenna for emergency operation.

I plan on getting a PPC and getting my HK-21 fixed and up to running KISS mode so that I can go back to kite string packet operations with this baby. (connecting the jpole to the kite string and elevating the kite....)

swood
WQ8B - 73 de scott

--

YEAH!!! Finally that time of year again - it's whackin' season!!!
Sept. 08 Opening day of early Michigan Elk seasons (permit only - see guide)
Sept. 10 Opening day of Michigan Bear season (permit only)
(Hope you got your permit applications in early...)

Date: 10 Sep 93 12:10:49 GMT
From: ogicse!uwm.edu!math.ohio-state.edu!magnus.acs.ohio-state.edu!
wvanhorn@network.ucsd.edu
Subject: Problem with MININEC3
To: ham-ant@ucsd.edu

>I'm trying to model a simple 40/20 meter parallel dipole.
I get a >reasonable impedance on 40 meters with or without
the parallel dipole. >However, the impedance on 20 meters is
ridiculous. (This observation >is based on empirical
evidence).

Mark -

I think that in this case mininec is giving you the true
result. Once upon a time, I tried an actual
40-meter/20-meter parallel dipole made with a 20-meter

half-wavelength of 450 ohm ladder line in the center, with a single wire extending the length of one side to 40-meter length. So, the two antennas were only 1" (approx) apart. It resonated fine on 40, but showed ridiculous impedance on 20, just as your computer predicted!

73, Van - W8UOF
wvanhorn@magnus.acs.ohio-state.edu

Date: Fri, 10 Sep 1993 19:20:41 GMT
From: newshub.nosc.mil!crash!news.cerf.net!usc!sdd.hp.com!col.hp.com!
news.dtc.hp.com!srngenprp!alanb@network.ucsd.edu
Subject: Tower Questions
To: ham-ant@ucsd.edu

Brian McMinn N5PSS (brian@amdcl2.amd.com) wrote:

: Besides the obvious, what are the advantages or disadvantages of a
: crank up tower? If you have one, do you always want it up when its
: down and down when it's up?

I am prejudiced against the triangular type crank-up towers. Many people have been hurt by them. NEVER CLIMB A CRANK-UP TOWER, even when it is down. It is very easy for it to be "almost" down, without your realizing it. When it slips those last couple inches, it can slice off your toes or fingers.

OK, you say, I won't climb it. What do you do when it gets stuck 1/2 way extended when you are trying to lower it? Your only safe alternative is to hire a big cherry picker. But most people will try to mickey mouse it by bracing it with two-by-fours and climbing it to fix the jam. Many people have been hurt that way.

If you have your heart set on a crank-up, I recommend the kind that is made of telescoping tubing -- it looks like a crank-up flagpole.

: How about freestanding vs. guyed? Can I get a fairly tall (100 ft)
: freestanding tower that will handle a moderate amount of antenna?

Yes, you can, but they are expensive. If you've got the \$\$\$ and don't mind pouring many yards of reinforced concrete in your yard, the freestanding tower is a good way to go: No messy-looking guy wires.

: If I go with a guyed tower, is there any way to elevate the ground tie
: point of the guy wires so I don't run into them? (A chunk of railroad
: iron in concrete???)

I recommend the type of rotator that has a separate control for the brake and the motor. That way you can let the antenna coast to a stop before engaging the brake, which causes much less torque on the tower. Another solution is to get torque arms for the guy points. These are metal rods which extend out a couple feet to the guy attachment point. They pretty much eliminate tower twisting.

: Do the various manufacturer's produce comparable quality towers or is there a big difference? I notice that one of the major players (Rohn) doesn't advertise in QST. Is this Rohn's choice or QST's choice?

I think Rohn towers are still the choice for most of the big-gun contesters and DXers. Rohn-25 is a guyed triangular tower about 1 foot on a side. You can go to well over 100+ feet if it is properly guyed. (It comes in 10-foot sections.) Price is not cheap, but reasonable.

: Is rock climbing equipment safe/sufficient for tower climbing? Do real "tower climbing belts" offer advantages that I should know about?

Invest in a good climbing belt. Avoid the ones with leather straps, as the leather has a tendency to deteriorate with age. Also, if you install the tower yourself, you will need a gin pole. (A pole that clamps to the tower and extends above it with a pulley for lifting up the next 10-foot section for installation.) If you ask around your area, someone probably has one you can borrow. You have to get the right kind: not all gin poles fit all towers. That's another reason to go for Rohn-25: it is one of the most popular tower types, so you're more likely to find a gin pole.

AL N1AL

Date: Fri, 10 Sep 1993 20:57:39 GMT
From: newshub.nosc.mil!crash!news.cerf.net!usc!sol.ctr.columbia.edu!
howland.reston.ans.net!vixen.cso.uiuc.edu!uwm.edu!linac!att!att!bigtop!longs!
n2ic@network.ucsd.edu
Subject: Tower Questions
To: ham-ant@ucsd.edu

Date: (null)
From: (null)
Congrats on moving to where you can put up some real antennas !

You have lots of good questions.

A good starting place is to get a copy of the Rohn catalog. I don't have their phone number handy, and if you can't otherwise find it, call Texas Towers and I'm sure they can help. The catalog is loaded with the kind of information you need, regardless of what kind of tower you choose.

For the height you are interested in, you really have two choices. You can go with a guyed tower (investigate Rohn 25, 45 and 55), or one of the US Tower (or equivalent) crank-ups. You will find that the cost of a crank-up that high will be several times greater than a guyed tower, even after including the cost of guy wire, cable clamps, guy anchors, etc. You don't want to climb a crank-up tower, unless you wish to lose bodily parts, such as fingers, arms or legs ! A guyed tower is super-sturdy for climbing.

Even though no manufacturer would ever recommend it (liability, you know), I know many hams that have used elevated guy anchors for 25 or more years with no problems. Typically they take some very sturdy steel tube, bury it in concrete down 4 feet, pour concrete inside the tube, etc. Most elevated anchors I have seen are about 4 or 5 feet above the ground.

Yes, running guy wires over the roof of your house does invite a lightning hazard. Not recommended (although I have seen it done).

Grounding is much easier than you describe it. Put several 8 foot ground rods right next to the tower, bonded to the tower. Use an 8 foot ground rod next to your house for your station ground. No need to interconnect the grounds. You will find only a fraction of an ohm resistance if you measure across between the station ground and the tower ground. In addition, the braid of your coax will act to tie these 2 grounds together.

With Rohn towers, rust is a non-issue, no matter where you live. Their hot-dipped galvanized steel is FB.

Rotors. As K5RC, "If they can make a \$300 washing machine that lasts 20 years, why can't they make a \$300 rotor that will last 20 years ?" Forget faster rotation - they are all around 1 RPM. Off-center loads eat up rotors. Tower torque is a matter of what antennas you put on top, and how you guy it. Nothing to do with rotors. Rotor torque is another story.

I don't know why Rohn doesn't advertise in QST anymore. I am an extremely active tester. Every serious tester I know, who has guyed towers, uses Rohn towers. There's no competition.

You might want to send e-mail to cq-contest-request@tgw.com and ask to

subscribe to the cq-contest reflector. Then send your same tower info request to the reflector (by mailing it to cq-contest@tgv.com). I think you will get lots of useful replies.

73,
Steve, N2IC/0

Date: Fri, 10 Sep 1993 05:05:20 GMT
From: swrinde!gatech!darwin.sura.net!europa.eng.gtefsd.com!howland.reston.ans.net!
agate!netsys!pagesat!indirect.com!jbromley@network.ucsd.edu
To: ham-ant@ucsd.edu

References <26nclg\$kvvn@news.delphi.com>, <26nh1m\$17f@jericho.mc.com>,
<26ouht\$dhv@news.delphi.com>a
Subject : Re: G5RV

In article <26ouht\$dhv@news.delphi.com>
cecilmoo@news.delphi.com (CECILMOORE@DELPHI.COM) writes:

>... Is a G5RV a G5RV without the coax?...73, KG7BK

Oh, that's a KG7BK-fed G5RV ;-)

Jim, W5GYJ

--
Jim Bromley, W5GYJ All opinions strictly my own.
5128 N. 69th Avenue tel: 602-848-8711
Glendale, AZ 85303 Internet: jbromley@indirect.com

End of Ham-Ant Digest V93 #43
